

Prof. Kemal Bıçakcı

Personal Information

Email: kemalbicakci@itu.edu.tr

Web: <https://avesis.itu.edu.tr/kembalbicakci>

International Researcher IDs

ScholarID: HCTygx4AAAAJ

ORCID: 0000-0002-2378-8027

ScopusID: 6603355557

Yoksis Researcher ID: 201789

Education Information

Doctorate, Middle East Technical University, Graduate School Of Informatics, Information Systems, Turkey 1999 - 2003

Postgraduate, University of South Carolina, Elektrik Mühendisliği, United States Of America 1996 - 1999

Undergraduate, Hacettepe University, Mühendislik Fakültesi, Elektrik Ve Elektronik Bölümü, Turkey 1992 - 1996

Research Areas

algorithms, Information Security and Reliability, Computer Networks, Artificial Intelligence, Computer Learning and Pattern Recognition

Academic Titles / Tasks

Professor, Istanbul Technical University, Bilişim Enstitüsü, İletişim Sistemleri, 2020 - Continues

Associate Professor, Tobb University Of Economics And Technology, 2009 - 2020

Lecturer, Carleton University, 2011 - 2011

Assistant Professor, Tobb University Of Economics And Technology, 2007 - 2009

Research Assistant PhD, Vrije Universiteit, 2004 - 2006

Lecturer, Middle East Technical University, Graduate School Of Informatics, 2000 - 2006

Research Assistant PhD, University of South Carolina, 1998 - 2000

Lecturer, Middle East Technical University, Graduate School Of Informatics, Information Systems, 1996 - 1997

Academic and Administrative Experience

Head of Department, Istanbul Technical University, Bilişim Enstitüsü, Bilgisayar Bilimleri, 2022 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. A Survey of Denial-of-Service Attacks and Solutions in the Smart Grid

Huseinovic A., Mrdovic S., Bicakci K., Uludag S.

IEEE ACCESS, vol.8, pp.177447-177470, 2020 (SCI-Expanded)

II. The Impact of Incomplete Secure Connectivity on the Lifetime of Wireless Sensor Networks

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IEEE SYSTEMS JOURNAL, vol.12, no.1, pp.1042-1046, 2018 (SCI-Expanded)

- III. **A Closer Look at Pure-Text Human-Interaction Proofs**
Kiziloz H. E., Bicakci K.
IEEE TRANSACTIONS ON HUMAN-MACHINE SYSTEMS, vol.47, no.6, pp.994-1004, 2017 (SCI-Expanded)
- IV. **Leveraging human computation for pure-text Human Interaction Proofs**
Bicakci K., Kiziloz H. E.
INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES, vol.92-93, pp.44-54, 2016 (SCI-Expanded)
- V. **Maximizing Wireless Sensor Network lifetime by communication/computation energy optimization of non-repudiation security service: Node level versus network level strategies**
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- VI. **Evaluating energy cost of route diversity for security in wireless sensor networks**
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- VII. **Effects of node mobility on energy balancing in wireless networks**
Pala Z., Bicakci K., Turk M.
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- VIII. **The Impact of Transmission Power Control Strategies on Lifetime of Wireless Sensor Networks**
Cotuk H., Bicakci K., Tavli B., Uzun E.
IEEE TRANSACTIONS ON COMPUTERS, vol.63, no.11, pp.2866-2879, 2014 (SCI-Expanded)
- IX. **The impact of scalable routing on lifetime of smart grid communication networks**
Uzun E., Tavli B., Bicakci K., Incebacak D.
AD HOC NETWORKS, vol.22, pp.27-42, 2014 (SCI-Expanded)
- X. **LAKE: A Server-Side Authenticated Key-Establishment with Low Computational Workload**
Bicakci K., Crispo B., Oligeri G.
ACM TRANSACTIONS ON INTERNET TECHNOLOGY, vol.13, no.2, 2013 (SCI-Expanded)
- XI. **Optimal number of routing paths in multi-path routing to minimize energy consumption in wireless sensor networks**
Incebacak D., Tavli B., Bicakci K., Altin-Kayhan A.
EURASIP JOURNAL ON WIRELESS COMMUNICATIONS AND NETWORKING, 2013 (SCI-Expanded)
- XII. **Neighbor sensor networks: Increasing lifetime and eliminating partitioning through cooperation**
Bicakci K., Bagci I. E., Tavli B., Pala Z.
COMPUTER STANDARDS & INTERFACES, vol.35, no.4, pp.396-402, 2013 (SCI-Expanded)
- XIII. **A survey of visual sensor network platforms**
Tavli B., Bicakci K., Zilan R., Barcelo-Ordinas J. M.
MULTIMEDIA TOOLS AND APPLICATIONS, vol.60, no.3, pp.689-726, 2012 (SCI-Expanded)
- XIV. **A second look at the performance of neural networks for keystroke dynamics using a publicly available dataset**
Uzun Y., Bicakci K.
COMPUTERS & SECURITY, vol.31, no.5, pp.717-726, 2012 (SCI-Expanded)
- XV. **Communication/computation tradeoffs for prolonging network lifetime in wireless sensor networks: The case of digital signatures**
Bicakci K., Bagci I. E., Tavli B.
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- XVI. **Maximizing lifetime of event-unobservable wireless sensor networks**
Bicakci K., Gultekin H., Tavli B., Bagci I. E.
COMPUTER STANDARDS & INTERFACES, vol.33, no.4, pp.401-410, 2011 (SCI-Expanded)
- XVII. **Lifetime Bounds of Wireless Sensor Networks Preserving Perfect Sink Unobservability**
Bicakci K., Bagci I. E., Tavli B.
IEEE COMMUNICATIONS LETTERS, vol.15, no.2, pp.205-207, 2011 (SCI-Expanded)

- XVIII. **Impact of Limiting Number of Links on the Lifetime of Wireless Sensor Networks**
Tavli B., Akgun M. B., Bicakci K.
IEEE COMMUNICATIONS LETTERS, vol.15, no.1, pp.43-45, 2011 (SCI-Expanded)
- XIX. **Mitigation of Compromising Privacy by Transmission Range Control in Wireless Sensor Networks**
Tavli B., Ozciloglu M. M., Bicakci K.
IEEE COMMUNICATIONS LETTERS, vol.14, no.12, pp.1104-1106, 2010 (SCI-Expanded)
- XX. **The future of security in Wireless Multimedia Sensor Networks**
Guerrero-Zapata M., Zilan R., Barcelo-Ordinas J. M., Bicakci K., Tavli B.
TELECOMMUNICATION SYSTEMS, vol.45, no.1, pp.77-91, 2010 (SCI-Expanded)
- XXI. **Prolonging network lifetime with multi-domain cooperation strategies in wireless sensor networks**
Bicakci K., Tavli B.
AD HOC NETWORKS, vol.8, no.6, pp.582-596, 2010 (SCI-Expanded)
- XXII. **The Impact of One-Time Energy Costs on Network Lifetime in Wireless Sensor Networks**
Bicakci K., Gultekin H., Tavli B.
IEEE COMMUNICATIONS LETTERS, vol.13, no.12, pp.905-907, 2009 (SCI-Expanded)
- XXIII. **Denial-of-Service attacks and countermeasures in IEEE 802.11 wireless networks**
Bicakci K., Tavli B.
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- XXIV. **One-time proxy signatures revisited**
Bicakci K.
COMPUTER STANDARDS & INTERFACES, vol.29, no.4, pp.499-505, 2007 (SCI-Expanded)
- XXV. **Improved server assisted signatures**
Bicakci K., Baykal N.
COMPUTER NETWORKS, vol.47, no.3, pp.351-366, 2005 (SCI-Expanded)
- XXVI. **SAOTS: A new efficient server assisted signature scheme for pervasive computing**
Bicakci K., BAYKAL N.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), vol.2802, pp.187-200, 2004 (SCI-Expanded)
- XXVII. **A new design of privilege management infrastructure with binding signature semantics**
Bicakci K., BAYKAL N.
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), vol.3093, pp.306-313, 2004 (SCI-Expanded)
- XXVIII. **Server assisted signatures revisited**
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Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), vol.2964, pp.143-156, 2004 (SCI-Expanded)
- XXIX. **Improving the Security and Flexibility of One-Time Passwords by Signature Chains**
Bicakci K., BAYKAL N.
Turkish Journal of Electrical Engineering and Computer Sciences, vol.11, no.3, pp.223-236, 2003 (SCI-Expanded)
- XXX. **How to construct optimal one-time signatures**
Bicakci K., Tsudik G., Tung B.
COMPUTER NETWORKS-THE INTERNATIONAL JOURNAL OF COMPUTER AND TELECOMMUNICATIONS NETWORKING, vol.43, no.3, pp.339-349, 2003 (SCI-Expanded)
- XXXI. **One-time passwords: Security analysis using BAN logic and integrating with smartcard authentication**
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Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), vol.2869, pp.794-801, 2003 (SCI-Expanded)

Articles Published in Other Journals

- I. **EVEREST: an efficient method for verification of digital signatures in real-time teleradiology.**
Bicakci K., BAYKAL N.
Medinfo. MEDINFO, vol.11, no.Pt 2, pp.1241-1245, 2004 (Scopus)
- II. **Survivable authentication for health information systems.**
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Refereed Congress / Symposium Publications in Proceedings

- I. **Using Attribute-based Feature Selection Approaches and Machine Learning Algorithms for Detecting Fraudulent Website URLs**
Aydin M., Butun I., Bicakci K., Baykal N.
10th Annual Computing and Communication Workshop and Conference (CCWC), California, United States Of America, 6 - 08 January 2020, pp.774-779
- II. **Extending Attribute-Based Access Control Model with Authentication Information for Internet of Things**
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International Conference on Information Security and Cryptology (ISCTURKEY), ELECTR NETWORK, 3 - 04 December 2020, pp.48-55
- III. **Security Analysis of Mobile Authenticator Applications**
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International Conference on Information Security and Cryptology (ISCTURKEY), ELECTR NETWORK, 3 - 04 December 2020, pp.18-30
- IV. **Analysis and Evaluation of Keystroke Dynamics as a Feature of Contextual Authentication**
Bicakci K., Salman O., Uzunay Y., Tan M.
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- V. **Open-TEE is No Longer Virtual: Towards Software-only Trusted Execution Environments Using White-box Cryptography**
Bicakci K., Ak I. K., Ozdemir B. A., Gozutok M.
1st IEEE International Conference on Trust, Privacy and Security in Intelligent Systems and Applications (IEEE TPS-ISA), Los-Angeles, Chile, 12 - 14 December 2019, pp.177-183
- VI. **A Taxonomy of the Emerging Denial-of-Service Attacks in the Smart Grid and Countermeasures**
Huseinovic A., Mrdovic S., Bicakci K., Uludag S.
26th Telecommunications Forum, TELFOR 2018, Belgrade, Serbia, 20 - 21 November 2018
- VII. **How Safe Is Safety Number? A User Study on SIGNAL's Fingerprint and Safety Number Methods for Public Key Verification**
Bicakci K., Altuncu E., Sahkulubey M. S., Kiziloz H. E., Uzunay Y.
21st International Information Security Conference (ISC), Guildford, United Kingdom, 9 - 12 September 2018, vol.11060, pp.85-98
- VIII. **Automated Generation of Attack Graphs Using NVD**
Aksu M. U., Bicakci K., Dilek M. H., Ozbayoglu A. M., Tatli E. I.
8th ACM Conference on Data and Application Security and Privacy (CODASPY), Arizona, United States Of America, 19 - 21 March 2018, pp.135-142
- IX. **A quantitative CVSS-based cyber security risk assessment methodology for IT systems**
Aksu M. U., Dilek M. H., Tatli E. I., Bicakci K., Dirik H. I., Demirezen M. U., Aykir T.
2017 International Carnahan Conference on Security Technology, ICCST 2017, Madrid, Spain, 23 - 26 October 2017, vol.2017-October, pp.1-8

- X. **TwinCloud: Secure Cloud Sharing Without Explicit Key Management**
Bicakci K., Yavuz D. D., Gurkan S.
IEEE Conference on Communications and Network Security (CNS), Pennsylvania, United States Of America, 17 - 19 October 2016, pp.581-585
- XI. **Towards Making Accessible Human-Interaction Proofs More Secure and Usable**
Kiziloz H. E., Bicakci K.
IEEE Symposium on Computers and Communication (ISCC), Larnaka, Cyprus (Gkry), 6 - 09 July 2015, pp.607-612
- XII. **charPattern: Rethinking Android Lock Pattern to Adapt to Remote Authentication**
Bicakci K., Satiev T.
International Conference on Passwords (PASSWORDS), Trondheim, Norway, 8 - 10 December 2014, vol.9393, pp.74-86
- XIII. **The Impact of Bandwidth Constraints on the Energy Consumption of Wireless Sensor Networks**
Cotuk H., Tavli B., Bicakci K., Akgun M. B.
IEEE Wireless Communications and Networking Conference (WCNC), İstanbul, Turkey, 6 - 09 April 2014, pp.2787-2792
- XIV. **Mobile authentication secure against man-in-the-middle attacks**
Bicakci K., Unal D., Ascioğlu N., Adalier O.
2nd IEEE International Conference on Mobile Cloud Computing, Services, and Engineering, MobileCloud 2014, Oxford, United Kingdom, 7 - 10 April 2014, pp.273-276
- XV. **Mobile Authentication Secure Against Man-In-The-Middle Attacks**
Bicakci K., Unal D., Ascioğlu N., Adalier O.
11th International Conference on Mobile Systems and Pervasive Computing (MobiSPC), Niagara Falls, Canada, 17 - 20 August 2014, vol.34, pp.323-329
- XVI. **Communication/computation trade-offs in wireless sensor networks: Comparing network-level and node-level strategies**
Yildiz H. U., Bicakci K., Tavli B.
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- XVII. **Trusted3Ballot: Improving Security and Usability of ThreeBallot Voting System using Trusted Computing**
Uzunay Y., Bicakci K.
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- XVIII. **Revisiting graphical passwords for augmenting, not replacing, text passwords**
Akpulat M., Bicakci K., Cil U.
29th Annual Computer Security Applications Conference, ACSAC 2013, New Orleans, LA, United States Of America, 9 - 13 December 2013, pp.119-128
- XIX. **Effects of handshake hop length of unidirectional links on the lifetime of wireless sensor networks**
Tek yönlü bağlantı tokalaşma atlama uzunluğunun kablosuz algılayıcı ağ yaşam süresine etkileri
Batmaz A. U., Tavli B., Incebacak D., Biçakçı K.
2013 21st Signal Processing and Communications Applications Conference, SIU 2013, Haspolat, Turkey, 24 - 26 April 2013
- XX. **Network lifetime maximization and localized routing tradeoff in wireless sensor networks**
Kablosuz algılayıcı ağlarda yaşam süresi eniyilemesi ve yerel yönlendirme ödünleşmesi
Uzun E., Aksac A., Ozturk O., Kiziloz H. E., Incebacak D., Tavli B., Bicakci K.
2013 21st Signal Processing and Communications Applications Conference, SIU 2013, Haspolat, Turkey, 24 - 26 April 2013
- XXI. **The Impact of Link Unidirectionality and Reverse Path Length on Wireless Sensor Network Lifetime**
Batmaz A. U., Tavli B., Incebacak D., Bicakci K.
IEEE International Conference on Communications (ICC), Budapest, Hungary, 9 - 13 June 2013, pp.1795-1796
- XXII. **Uncovering the Impact of Minimum-Energy Routing on Lifetime of Wireless Sensor Networks**

Soylev A., Bicakci K., Tavli B.

9th IEEE International Conference on Distributed Computing in Sensor Systems (DCoSS), Cambridge, Canada, 21 - 23 May 2013, pp.436-441

XXIII. Mobility Helps Energy Balancing in Wireless Networks

Pala Z., Bicakci K., Tavli B.

IEEE Military Communications Conference, California, United States Of America, 18 - 20 November 2013, pp.293-298

XXIV. Energy cost of mitigating physical attacks in wireless sensor networks

Incebacak D., Bicakci K., Tavli B.

2012 5th International Conference on New Technologies, Mobility and Security, NTMS 2012, İstanbul, Turkey, 7 - 10 May 2012

XXV. Exploration and field study of a password manager using icon-based passwords

Bicakci K., Atalay N. B., Yuceel M., Van Oorschot P.

15th International Conference on Financial Cryptography and Data Security, FC 2011, St. Lucia, QLD, Australia, 28 February - 04 March 2011, vol.7126 LNCS, pp.104-118

XXVI. A multi-word password proposal (gridWord) and exploring questions about science in security research and usable security evaluation

Bicakci K., Van Oorschot P. C.

2011 New Security Paradigms Workshop, NSPW'11, Marin County, CA, United States Of America, 12 - 15 September 2011, pp.25-36

XXVII. Johnny in Internet café: User study and exploration of password autocomplete in web browsers

Bicakci K., Atalay N. B., Kiziloz H. E.

7th ACM Workshop on Digital Identity Management, DIM'11 - Co-located with 18th ACM Conference on Computer and Communications Security, CCS 2011, Chicago, IL, United States Of America, 21 October 2011, pp.33-42

XXVIII. NoTabNab: Protection against the "tabnabbing attack"

Unlu S. A., Bicakci K.

2010 Fall General Meeting and eCrime Researchers Summit, eCrime 2010, Dallas, TX, United States Of America, 18 - 20 October 2010

XXIX. Investigating the tradeoffs between spatial granularity and energy requirements in wireless sensor networks

Incebacak D., Bicakci K., Tavli B.

UKSim 4th European Modelling Symposium on Computer Modelling and Simulation, EMS2010, Pisa, Italy, 17 - 19 November 2010, pp.414-419

**XXX. Number of connection restriction in wireless sensor networks and its influence on network lifetime
Kablosuz algılayıcı ağlarda bağlantı sayısının sınırlandırılmasının ağ ömrü üzerindeki etkilerinin incelenmesi**

Burak Akgün M., Tavl B., Biçakci K.

2010 7th National Conference on Electrical, Electronics and Computer Engineering, ELECO 2010, Bursa, Turkey, 2 - 05 December 2010, pp.671-675

XXXI. Towards usable solutions to graphical password hotspot problem

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XXXII. Pushing the limits of one-time signatures

Bicakci K.

2nd International Conference on Security of Information and Networks, SIN'09, Famagusta, Cyprus (Gkry), 6 - 10 October 2009, pp.249-257

XXXIII. Graphical passwords as browser extension: Implementation and usability study

Bicakci K., Yuceel M., Erdeniz B., Gurbaslar H., Atalay N. B.

3rd IFIP WG 11.11 International Conference on Trust Management, IFIPTM 2009, Indiana, United States Of America, 15 - 19 June 2009, vol.300, pp.15-29

- XXXIV. **Optimal discretization for high-entropy graphical passwords**
Bicakci K.
2008 23rd International Symposium on Computer and Information Sciences, ISCIS 2008, İstanbul, Turkey, 27 - 29 October 2008
- XXXV. **SHA: A secure voice activated smart home for quadriplegia patients**
Uzunay Y., Bicakci K.
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- XXXVI. **Security for the mythical air-dropped sensor network**
Gamage C., Bicakci K., Crispo B., Tanenbaum A. S.
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- XXXVII. **One-time sensors: A novel concept to mitigate node-capture attacks**
Bicakci K., Gamage C., Crispo B., Tanenbaum A. S.
Second European Workshop on Security and Privacy in Ad-hoc and Sensor Networks, ESAS 2005, Visegrad, Hungary, 13 - 14 July 2005, vol.3813 LNCS, pp.80-90
- XXXVIII. **UNIDES: An efficient real-time system to detect and block unauthorized Internet access**
Uzunay Y., Bicakci K.
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- XXXIX. **A cost-efficient counter-intrusion scheme for one-time sensor networks**
Gamage C., Leiwo J., Bicakci K., Crispo B., Tanenbaum A. S.
2005 Intelligent Sensors, Sensor Networks and Information Processing Conference, Melbourne, Australia, 5 - 08 December 2005, vol.2005, pp.45-50
- XL. **How to incorporate revocation status information into the trust metrics for public-key certification**
Bicakci K., Crispo B., Tanenbaum A. S.
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- XLI. **Counting abuses using flexible off-line credentials**
Bicakci K., Crispo B., Tanenbaum A. S.
10th Australasian Conference on Information Security and Privacy, ACISP 2005, Brisbane, Australia, 4 - 06 July 2005, vol.3574, pp.548-559
- XLII. **Design and performance evaluation of a flexible and efficient server assisted signature protocol**
Bicakci K., Baykal N.
8th IEEE International Symposium on Computers and Communication (ISCC 2003), Antalya, Turkey, 30 June - 03 July 2003, pp.1239-1244
- XLIII. **Infinite length hash chains and their applications**
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11th IEEE International Workshop on Enabling Technologies - Infrastructure for Collaborative Enterprises (WET ICE 2002), Pennsylvania, United States Of America, 10 - 12 June 2002, pp.57-61

Metrics

Publication: 85

Citation (WoS): 543

Citation (Scopus): 904

H-Index (WoS): 12

H-Index (Scopus): 16

Non Academic Experience

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